47. ANALYSIS OF CWC-RELATED COMPOUNDS IN A RUBBER SAMPLE

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ABSTRACT

Chemicals listed in the CWC schedules have been analysed from a rubber sample.

The sample was prepared and analysed using the Recommended Operating Procedures developed at the Finnish Institute for Verification of the Chemical Weapons Convention (VERIFIN). The spiked rubber sample and a corresponding blank were submitted to sample preparation procedures involving acetone extraction for direct analysis of non-polar compounds and acetone extraction followed by derivatization for analysis of polar compounds. Water extaction and subsequent derivatization were also performed for analysis of the polar compounds.

Then the samples were screened by two gas chromatography techniques with non-selective (FID) and selective detectors (NPD, FPD). First identification of spiked chemicals was based on the Retention Index Monitoring (RIM) method.

For each identified chemical, analyses were performed with at least two spectroscopic methods, in accordance to the OPCW rules: GC/EI-MS, GC/FT-IR and/or NMR. The analysed compounds were schedule 1 and schedule 2 chemicals and degradation products or by-products of some of them: O-Isopropyl methylphosphonofluoridate (Sarin), bis(2-chloroethylthioethyl)ether (O-Mustard), bis(2-chloroethyl)sulfide (Mustard gas), ethyl isopropyl methylphosphonate, isopropyl methylphosphonate and methylphosphonate.

(This paper was not presented)